



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Garth A. Hystad

Serial No.: 09/776,530

Filed: February 3, 2001

Atty. File No.: 45303-00070

For: "METHOD AND SYSTEM FOR  
DECK AND RAIL CONSTRUCTION  
USING WOOD COMPOSITES"

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

) Group Art Unit: 2856  
)  
) Examiner: Noland, T.  
)  
) PRELIMINARY AMENDMENT  
) AND RESPONSE TO NOTICE TO  
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HOLME ROBERTS & OWEN LLP

BY: Rebecca L. Wilson

What follows is the Applicant's Preliminary Amendment of the Specification and Drawings. In accordance with Rule 1.121, Section I is a "marked up version" of specified paragraphs in the Description of the Invention, with amendments noted. Section II is a "cleaned up" version of the same paragraphs, attached on separate pages. Section III includes a marked up version of the drawings. Section IV includes Comments explaining the amendments.

I. MARKED UP VERSION OF AMENDMENTS TO THE SPECIFICATION

All amendments shown below are made to paragraphs in the section of the Specification entitled "Description of the Invention."

1. Please amend the 4<sup>th</sup> paragraph of this section, at pages 6-7 of the Specification, as follows:

In one embodiment of the invention, the method involves attaching metal facing to wood composite materials using a system which avoids nails or screws. The use of nails or screws with composite materials may not be desired because certain composite building products do not have solid cores, and for this reason and in some cases due to the composition and strength of the composite, composite building products may not hold nails or screws well. One embodiment of the invention, presented in the context of deck and step construction with wood composite materials, is depicted in Figure 1. In this embodiment, the facing 1 is comprised of a thin sheet of metal, such as aluminum. As is seen in view A of Figure 1, the facing 1 has an outer surface 2 and an inner or back surface 4 which covers the surface of the composite material, such as cut edges of composite floor boards. The back surface 4 of the facing may be designed to include also a thin lip 6 attached to the back surface 4, and extending away from the surface as shown in view A. The lip 6 may form about a 90° angle with the back surface 4 of the facing, or may form an angle of another size, depending on the system for attachment and design of the deck or other construction. Typically, the facing may be aligned to cover the exposed cut or uncut composite material, and the lip permits attachment of the facing to cover the composite material without nails or screws. As seen in view B of Fig. 1, [I]n the case of deck construction, for example, the deck floor boards 7 (decking) may be cut so that, at the edge or rim of the deck, the non-solid core is exposed. The deck floor boards 7 are typically supported by one or more wooden deck support members (or joists) 8 lying underneath them. A support member 10 for the facing may be attached to the deck support member 8 so that a narrow space is formed between the bottom surface of the composite floor boards 7 and the top of the support member 10 for the facing; the surfaces surrounding this space are sized to accommodate and hold the lip 6 of the metal facing 1, which is inserted into the space. The lip 6 may then be pushed snugly into the space, bringing the back surface of the facing close to or in contact with the exposed edge surface of the composite floor boards 7 of the deck. The distance between the support member 10 for facing and the bottom of the composite floor boards 7 may be sized to be slightly greater than the width of the lip 6 of the metal facing to provide for a close fit. The length of the lip 6 may be adjusted as a function of the size and weight of the facing to provide adequate anchoring for the facing. In this embodiment, the facing lip 6 may be slipped into the area formed by bottom surface of the composite floor boards 7 and the top surface of the support member 10 for the facing, so that there is no need for the facing to be nailed or screwed to the composite

material or any of the support members. The facing may be sized to cover all or part of the exposed edge of the composite floor boards 7, the underlying support member 10 for facing, and one or more of the deck support members 8.

2. Please amend the 5<sup>th</sup> paragraph of this section, at pages 7-8 of the Specification, as follows:

The lip 6 of the facing 1 may be produced by bending a section of a metal sheet used to form the facing back against the back surface 4 of the facing 1, and then bending the lip 6 to extend outwards (in the present embodiment, at an angle of about 90° to the back surface 4 of the facing). The bottom edge of the facing may also be bent or rolled back to create a smooth edge 12. The facing 1 and its lip 6 may also be formed by extrusion, molding or casting. A powder coating may be applied to the facing for protection of the surface of the facing, and for decorative purposes. Optionally, as seen in Fig. 1E, a lighting fixture or strip 16 may be attached behind the facing 1, to the facing support member 10, the deck support 8, or between the facing support member 10 and the facing 1.

3. Please amend the 6<sup>th</sup> paragraph of this section, at page 8 of the Specification, as follows:

As depicted in Figs. 1B and 1G, [I]in another embodiment, the metal facing 14 may be attached to the deck support member 8. In a preferred embodiment in the context of deck construction depicted in Figs. 1B and 1C, a first layer of facing 1 covers the composite deck floor board 7 edges, and the facing support member 10, while a second layer of facing 14 covers the deck support member 8. This produces a two-tiered or double facing, and allows for a uniform finish to be created for both layers of facing, avoiding the lack of continuity in finish and color that occurs when the deck floor boards are comprised of composite materials and the support members are made of wood (the composite and wood have a different surface texture, and different capacity to absorb stain and other coloring or finishing materials). It should be noted that natural wood products are often preferred for use as structural support members such as the deck supports that underlie and support the composite floor boards.

4. Please amend the 7<sup>th</sup> paragraph of this section, at pages 8-9 of the Specification, as follows:

When a two-tiered or double facing is used, the lower layer of facing 14 may cover the entire outer face of the deck support member 8 (as in view E of Figure 1), or only a part of such outer face. The facing 14 may be attached to the deck support member 8 by any of several methods, such as by nailing or screwing the facing to the support member. In one embodiment, the facing may be sandwiched between the deck support member 8 and the facing support member 10, as also shown in view E of Figure 1. In another embodiment, the method may involve not only covering the edge of composite deck floor boards 7 with facing 1 by inserting a lip of the facing 1 between a facing support member 10 and the bottom surface of the composite floor boards 7, but also by nailing or screwing the lower portion of the facing 1 to the facing support member 10. See view E of Figure 1.

5. Please amend the 8<sup>th</sup> paragraph of this section, at page 9 of the Specification, as follows:

In another aspect of the invention, single or double metal facing 18, 20 may be used to cover the edge of composite steps 22 and wood or composite risers 24 used in step or stair construction. See views D, F and G of Figure 1. The invention may be applied to other areas in which it is desired to cover and/or finish the edges of composite floor boards, rail elements, panels, and decorative pieces. Figure 2 (see views A and B) depicts another embodiment of the invention, in which a single piece of metal facing 26 is applied to cover the cut edge of composite floor boards 28, and facing 30 and deck support members 32.

6. Please amend the 16<sup>th</sup> paragraph of this section, at pages 13-14 of the Specification, as follows:

The attached Figure 3 depicts one embodiment of the invention, in which the posts [4] 104 are 6" x 6" redwood posts, and an upper cross member [6] 106 and lower cross member [8] 108 are formed from 2" x 4" wood-polymer composite boards. A 2" x 6" wood-polymer composite hand rail [10] 110 is applied on top of the upper cross member. Two attachment members [12] 112 are

formed from a 2" x 6" wood-polymer composite board, and are connected by screws to the inner surface of each post [4] 104. The upper cross member [6] 106 and lower cross member [8] 108 are then inserted in slots cut in each attachment member. Two views of a 2" x 6" attachment member 112 are depicted. Balusters [14] 114, preferably comprised of powder-coated metal tubing, are inserted into the two cross members [6 and 8] 106 and 108; spaces or slots are routered into the cross members [6 and 8] 106 and 108 to accommodate the balusters [14] 114. The slots in the upper cross member [6] 106 are cut to a depth that allows the balusters to drop slightly with sag or bending in the lower cross member [8] 108, without falling out of the slot. In the embodiment depicted in Figure 3, it is felt that 2" x 4" cross members of around five feet in length or less reduce the risk of sag or bending, and promote the structural strength and stability of the railing segment.

7. Please amend the 17<sup>th</sup> paragraph of this section, at page 14 of the Specification, as follows:

The attached Figure 4 depicts another embodiment of the invention, including a form of facing 200 which may be applied to cover cut or uncut ends of deck floor boards, step elements and other deck elements as discussed above. In a preferred embodiment, the facing is formed of a metal, such as aluminum. The facing 200 may be attached to a cut or uncut step, riser or floor board, or other deck element, using a nail or screw or other similar fastening means. The facing may be sized to cover all or a portion of the rim or edge of a deck, a step, or an underlying riser or deck support member, as examples. Fig. 4A, 4B and 4C provide side, front and perspective views of beveled edge facing; Figs. 4D, 4E and 4F provide side, front and perspective view of beveled edge facing with a flattened beveled finish.

## II. CLEAN VERSION OF AMENDMENTS TO SPECIFICATION

What follows is the clean version of the above amended paragraphs to the Description of the Invention:

1. 4<sup>th</sup> paragraph of this section, at pages 6-7 of the Specification, as follows:

In one embodiment of the invention, the method involves attaching metal facing to wood composite materials using a system which avoids nails or screws. The use of nails or screws with composite materials may not be desired because certain composite building products do not have solid cores, and for this reason and in some cases due to the composition and strength of the composite, composite building products may not hold nails or screws well. One embodiment of the invention, presented in the context of deck and step construction with wood composite materials, is depicted in Figure 1. In this embodiment, the facing 1 is comprised of a thin sheet of metal, such as aluminum. As is seen in view A of Figure 1, the facing 1 has an outer surface 2 and an inner or back surface 4 which covers the surface of the composite material, such as cut edges of composite floor boards. The back surface 4 of the facing may be designed to include also a thin lip 6 attached to the back surface 4, and extending away from the surface as shown in view A. The lip 6 may form about a 90° angle with the back surface 4 of the facing, or may form an angle of another size, depending on the system for attachment and design of the deck or other construction. Typically, the facing may be aligned to cover the exposed cut or uncut composite material, and the lip permits attachment of the facing to cover the composite material without nails or screws. As seen in view B of Fig. 1, in the case of deck construction, for example, the deck floor boards 7 (decking) may be cut so that, at the edge or rim of the deck, the non-solid core is exposed. The deck floor boards 7 are typically supported by one or more wooden deck support members (or joists) 8 lying underneath them. A support member 10 for the facing may be attached to the deck support member 8 so that a narrow space is formed between the bottom surface of the composite floor boards 7 and the top of the support member 10 for the facing; the surfaces surrounding this space are sized to accommodate and hold the lip 6 of the metal facing 1, which is inserted into the space. The lip 6 may then be pushed snugly into the space, bringing the back surface of the facing close to or in contact with the exposed edge surface of the composite floor boards 7 of the deck. The distance between the support

member 10 for facing and the bottom of the composite floor boards 7 may be sized to be slightly greater than the width of the lip 6 of the metal facing to provide for a close fit. The length of the lip 6 may be adjusted as a function of the size and weight of the facing to provide adequate anchoring for the facing. In this embodiment, the facing lip 6 may be slipped into the area formed by bottom surface of the composite floor boards 7 and the top surface of the support member 10 for the facing, so that there is no need for the facing to be nailed or screwed to the composite material or any of the support members. The facing may be sized to cover all or part of the exposed edge of the composite floor boards 7, the underlying support member 10 for facing, and one or more of the deck support members 8.

2. 5<sup>th</sup> paragraph of this section, at pages 7-8 of the Specification, as follows:

The lip 6 of the facing 1 may be produced by bending a section of a metal sheet used to form the facing back against the back surface 4 of the facing 1, and then bending the lip 6 to extend outwards (in the present embodiment, at an angle of about 90° to the back surface 4 of the facing). The bottom edge of the facing may also be bent or rolled back to create a smooth edge 12. The facing 1 and its lip 6 may also be formed by extrusion, molding or casting. A powder coating may be applied to the facing for protection of the surface of the facing, and for decorative purposes. Optionally, as seen in Fig. 1E, a lighting fixture or strip 16 may be attached behind the facing 1, to the facing support member 10, the deck support 8, or between the facing support member 10 and the facing 1.

3. 6<sup>th</sup> paragraph of this section, at page 8 of the Specification, as follows:

As depicted in Figs. 1B and 1G, in another embodiment, the metal facing 14 may be attached to the deck support member 8. In a preferred embodiment in the context of deck construction depicted in Figs. 1B and 1C, a first layer of facing 1 covers the composite deck floor board 7 edges, and the facing support member 10, while a second layer of facing 14 covers the deck support member 8. This produces a two-tiered or double facing, and allows for a uniform finish to be created for both layers of facing, avoiding the lack of continuity in finish and color that occurs when the deck

floor boards are comprised of composite materials and the support members are made of wood (the composite and wood have a different surface texture, and different capacity to absorb stain and other coloring or finishing materials). It should be noted that natural wood products are often preferred for use as structural support members such as the deck supports that underlie and support the composite floor boards.

4. 7<sup>th</sup> paragraph of this section, at pages 8-9 of the Specification, as follows:

When a two-tiered or double facing is used, the lower layer of facing 14 may cover the entire outer face of the deck support member 8 (as in view E of Figure 1), or only a part of such outer face. The facing 14 may be attached to the deck support member 8 by any of several methods, such as by nailing or screwing the facing to the support member. In one embodiment, the facing may be sandwiched between the deck support member 8 and the facing support member 10, as also shown in view E of Figure 1. In another embodiment, the method may involve not only covering the edge of composite deck floor boards 7 with facing 1 by inserting a lip of the facing 1 between a facing support member 10 and the bottom surface of the composite floor boards 7, but also by nailing or screwing the lower portion of the facing 1 to the facing support member 10. See view E of Figure 1.

5. 8<sup>th</sup> paragraph of this section, at page 9 of the Specification, as follows:

In another aspect of the invention, single or double metal facing 18, 20 may be used to cover the edge of composite steps 22 and wood or composite risers 24 used in step or stair construction. See views D, F and G of Figure 1. The invention may be applied to other areas in which it is desired to cover and/or finish the edges of composite floor boards, rail elements, panels, and decorative pieces. Figure 2 (see views A and B) depicts another embodiment of the invention, in which a single piece of metal facing 26 is applied to cover the cut edge of composite floor boards 28, and facing 30 and deck support members 32.



6. 16<sup>th</sup> paragraph of this section, at pages 13-14 of the Specification, as follows:

The attached Figure 3 depicts one embodiment of the invention, in which the posts 104 are 6" x 6" redwood posts, and an upper cross member 106 and lower cross member 108 are formed from 2" x 4" wood-polymer composite boards. A 2" x 6" wood-polymer composite hand rail 110 is applied on top of the upper cross member. Two attachment members 112 are formed from a 2" x 6" wood-polymer composite board, and are connected by screws to the inner surface of each post 104. The upper cross member 106 and lower cross member 108 are then inserted in slots cut in each attachment member. Two views of a 2" x 6" attachment member 112 are depicted. Balusters 114, preferably comprised of powder-coated metal tubing, are inserted into the two cross members 106 and 108; spaces or slots are routed into the cross members 106 and 108 to accommodate the balusters 114. The slots in the upper cross member 106 are cut to a depth that allows the balusters to drop slightly with sag or bending in the lower cross member 108, without falling out of the slot. In the embodiment depicted in Figure 3, it is felt that 2" x 4" cross members of around five feet in length or less reduce the risk of sag or bending, and promote the structural strength and stability of the railing segment.

7. 17<sup>th</sup> paragraph of this section, at page 14 of the Specification, as follows:

The attached Figure 4 depicts another embodiment of the invention, including a form of facing 200 which may be applied to cover cut or uncut ends of deck floor boards, step elements and other deck elements as discussed above. In a preferred embodiment, the facing is formed of a metal, such as aluminum. The facing 200 may be attached to a cut or uncut step, riser or floor board, or other deck element, using a nail or screw or other similar fastening means. The facing may be sized to cover all or a portion of the rim or edge of a deck, a step, or an underlying riser or deck support member, as examples. Fig. 4A, 4B and 4C provide side, front and perspective views of beveled edge facing; Figs. 4D, 4E and 4F provide side, front and perspective view of beveled edge facing with a flattened beveled finish.

### III. AMENDMENT TO DRAWINGS

What follows on the attached pages are amendments to the drawings. The amendments are depicted in red ink on photocopies of the original drawings submitted by Applicant. As discussed below, these amendments add certain reference numbers and otherwise bring the format of the drawings into compliance with USPTO rules, and do not introduce new matter. Attached are copies of formal drawings submitted with this Preliminary Amendment, which incorporate the amendments depicted and, it is hoped, will be acceptable. If it is necessary to submit corrected or revised drawings, substitutes will be filed.

### IV. COMMENTS

The above-described amendments are submitted to revise the informal drawings submitted to bring them into compliance with USPTO rules. The amendments include the addition of certain reference numbers and figure references in the drawings and the text of the Specification. As will be seen, the correlation between the reference numbers and figure references added to the drawings and inserted in the text is self-evident, and no new matter has been introduced.

Formal drawings have been submitted simultaneously as required by the publication rules at 37 C.F.R. 1.84. It is hoped that these formal drawings will be accepted as the new drawings incorporating the attached amendments.

Applicant respectfully requests that all amendments be accepted and entered. Applicant also requests that any fee not covered and required under the rules be deducted from deposit account no. 08-2665.

Respectfully Submitted,

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Date: May 14, 2001